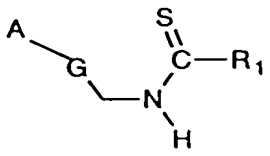
WHAT IS CLAIMED IS:

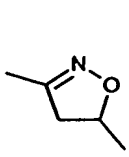
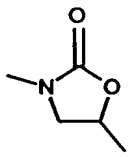
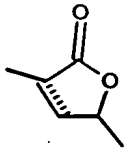
1. A method of treating or preventing osteoporosis, bone resorption or other bone disease in a vertebrate mammal, comprising the step of administering to a mammal in need of such treatment, an effective amount of a compound of formula I



I

or pharmaceutical acceptable salts thereof wherein:

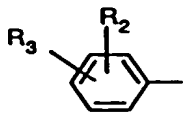
G is

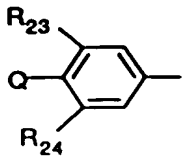




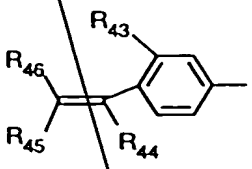
R_1 is

a) H,
b) NH_2,
c) NH-C_{1-4} alkyl,
d) C_{1-4} alkyl,
e) -OC_{1-4} alkyl,
f) -S C_{1-4} alkyl,
g) C_{1-4} alkyl substituted with 1-3 F, 1-2 Cl, CN or -COOC_{1-4} alkyl,
h) C_{3-6} cycloalkyl,
i) N(C_{1-4} alkyl)$_2$ or
j) N$(CH_2)_{2-5}$;

A is

a)  ,

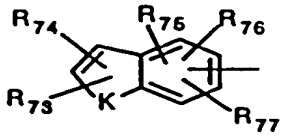
b)  ,

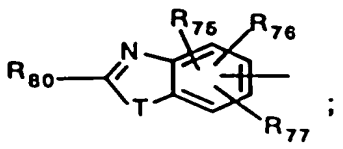
c)  ,

d) a 5-membered heteroaromatic moiety having one to three atoms selected from the group consisting of S, N, and O,
wherein the 5-membered heteroaromatic moiety is bonded via a carbon atom,
wherein the 5-membered heteroaromatic moiety can additionally have a fused-on benzene or naphthyl ring,
wherein the heteroaromatic moiety is optionally substituted with one to three R_{48},

e) a 6-membered heteroaromatic moiety having at least one nitrogen atom,
wherein the heteroaromatic moiety is bonded via a carbon atom,
wherein the 6-membered heteroaromatic moiety can additionally have a fused-on benzene or naphthyl ring,
wherein the heteroaromatic moiety is optionally substituted with one to three R_{65},

f) a β-carbolin-3-yl, or indolizinyl bonded via the 6-membered ring, optionally substituted with one to three R_{65},

g)  , or

b) 

;

wherein R_2 is

a) H,
b) F,
c) Cl,
d) Br,
e) C_{1-3} alkyl,
f) NO_2, or
g) R_2 and R_3 taken together are -O-$(CH_2)_h$-O-;

R_3 is

a) -S(=O)$_i$ R_4,
b) -S(=O)$_2$-N=S(O)$_j$$R_5$$R_6$,
c) -SC(=O)R_7,
d) -C(=O)R_8,
e) -C(=O)R_9,
f) -C(=O)N$R_{10}$$R_{11}$,
g) -C(=NR_{12})R_8,
h) -C(R_8)(R_{11})-OR_{13},
i) -C(R_9)(R_{11})-OR_{13},
j) -C(R_8)(R_{11})-OC(=O)R_{13},
k) -C(R_9)(R_{11})-OC(=O)R_{13},
l) -N$R_{10}$$R_{11}$,
m) -N(R_{10})-C(=O)R_7,
n) -N(R_{10})-S(=O)$_i$$R_7$,
o) -C(OR_{14})(OR_{15})R_8,
p) -C(R_8)(R_{16})-N$R_{10}$$R_{11}$, or
q) C_{1-6} alkyl substituted with one or more =O other than at alpha position, -S(=O)$_i$$R_{17}$, -N$R_{10}$$R_{11}$, C_{2-6} alkenyl, or C_{2-6} alkynyl;

R_4 is

a) C_{1-4} alkyl optionally substituted with one or more halos, OH, CN, N$R_{10}$$R_{11}$, r -$CO_2R_{13}$,
b) C_{2-4} alkenyl,

c) $-NR_{16}R_{18}$,

d) $-N_3$,

e) $-NHC(=O)R_7$,

f) $-NR_{20}C(=O)R_7$,

g) $-N(R_{19})_2$,

h) $-NR_{16}R_{19}$, or

i) $-NR_{19}R_{20}$,

R_5 and R_6 at each occurrence are the same or different and are

a) C_{1-2} alkyl, or

b) R_5 and R_6 taken together are $-(CH_2)_k-$;

R_7 is C_{1-4} alkyl optionally substituted with one or more halos;

R_8 is

a) H, or

b) C_{1-8} alkyl optionally substituted with one or more halos, or C_{3-8} cycloalkyl;

R_9 is C_{1-4} alkyl substituted with one or more

a) $-S(=O)R_{17}$,

b) $-OR_{13}$,

c) $-OC(=O)R_{13}$,

d) $-NR_{10}R_{11}$, or

e) C_{1-5} alkenyl optionally substituted with CHO;

R_{10} and R_{11} at each occurrence are the same or different and are

a) H,

b) C_{1-4} alkyl, or

c) C_{3-8} cycloalkyl;

R_{12} is

a) $-NR_{10}R_{11}$,

b) $-OR_{10}$; or

c) $-NHC(=O)R_{10}$;

R_{13} is

a) H, or

b) C_{1-4} alkyl;

R_{14} and R_{15} at each occurrence are the same or different and are

a) C_{1-4} alkyl, or

b) R_{14} and R_{15} taken together are $-(CH)_l-$;

R_{16} is

a) H,

b) C_{1-4} alkyl, or

c) C_{3-6} cycloalkyl;

R_{17} is

a) C_{1-4} alkyl, or

b) C_{3-6} cycloalkyl;

R_{18} is

a) H,

b) C_{1-4} alkyl,

c) C_{2-4} alkenyl,

d) C_{3-4} cycloalkyl,

e) $-OR_{13}$ or

f) $-NR_{21}R_{22}$;

R_{19} is

a) Cl,

b) Br, or

c) I;

R_{20} is a physiologically acceptable cation;

R_{21} and R_{22} at each occurrence are the same or different and are

a) H,

b) C_{1-4} alkyl, or

c) $-NR_{21}R_{22}$ taken together are $-(CH_2)_m-$;

wherein R_{23} and R_{24} at each occurrence are the same or different and are

a) H,

b) F,

c) Cl,

d) C_{1-2} alkyl,

e) CN

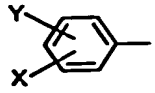
f) OH,

g) C_{1-2} alkoxy,

h) nitro, or

i) amino;

Q is

a) 

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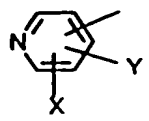
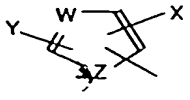
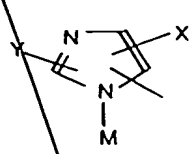
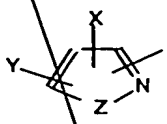
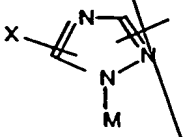
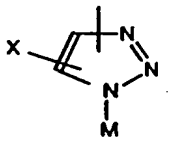
b)  ,

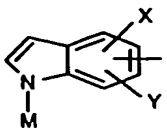
c)  ,

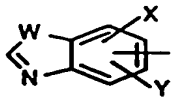
d)  ,

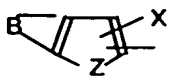
e)  ,

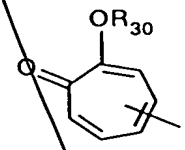
f)  ,

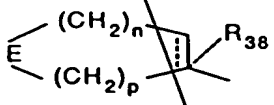
g)  ,

h)  ,

i)  ,

j) 

k) 

l) 

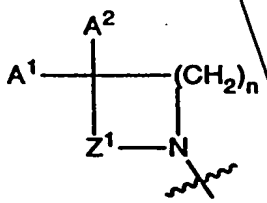
m) a diazinyl group optionally substituted with X and Y,

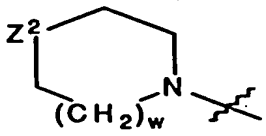
n) a triazinyl group optionally substituted with X and Y,

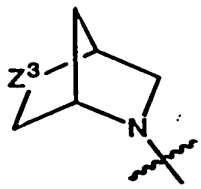
o) a quinolinyl group optionally substituted with X and Y,

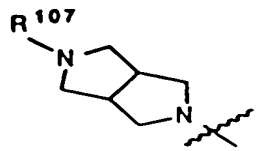
p) a quinoxalinyl group optionally substituted with X and Y,

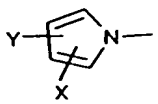
q) a naphthyridinyl group optionally substituted with X and Y,

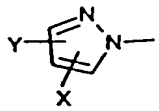
r) 

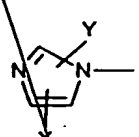
s) 

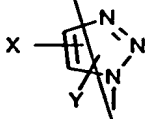
t) 

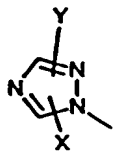
u)  ,

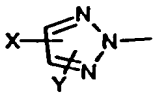
v)  ,

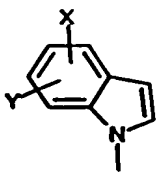
w)  ,

x)  ,

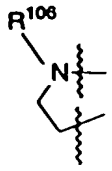
y)  ,

z)  ,

aa)  ,

bb)  or,

Q and R_{24} tak n together are



wherein Z^1 is

a) $-CH_2-$,

b) $-CH(R^{104})-CH_2-$,

c) $-C(O)-$, or

d) $-CH_2CH_2CH_2-$;

wherein Z^2 is

a) $-O_2S-$,

b) $-O-$,

c) $-N(R^{107})-$,

d) $-OS-$, or

e) $-S-$;

wherein Z^3 is

a) $-O_2S-$,

b) $-O-$,

c) $-OS-$, or

d) $-S-$;

wherein A^1 is

a) H-, or

b) CH_3;

wherein A^2 is

a) H-,

b) HO-,

c) CH_3-,

d) CH_3O-,

e) $R^{102}O-CH_2-C(O)-NH-$

f) $R^{103}O-C(O)-NH-$,

g) (C_1-C_2)alkyl-O-C(O)-,

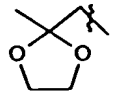
h) $HO-CH_2-$,

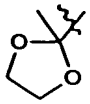
i) CH_3O-NH-,

j) (C_1-C_3)alkyl-O_2C-

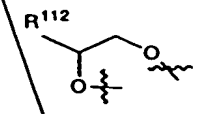
k) CH_3-C(O)-,

l) CH_3-C(O)-CH_2-,

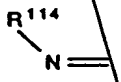
m)  , or

n)  ,

A^1 and A^2 taken together are:

a)  ,

b) O= , or

c)  ;

wherein R^{102} is

a) H-,

b) CH_3-,

c) phenyl-CH_2-, or

d) $CH_3C(O)$-;

wherein R^{103} is

a) (C_1-C_3)alkyl-, or

b) phenyl-;

wherein R^{104} is

a) H-, or

b) HO-;

wherein R^{105} is

a) H-,

b) (C_1-C_3)alkyl-,

c) $CH_2 = CH\text{-}CH_2\text{-}$, or

d) $CH_3\text{-}O\text{-}(CH_2)_2\text{-}$;

wherein R^{106} is

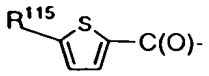
a) $CH_3\text{-}C(O)\text{-}$,

b) $H\text{-}C(O)\text{-}$,

c) $Cl_2CH\text{-}C(O)\text{-}$,

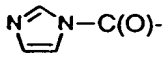
d) $HOCH_2\text{-}C(O)\text{-}$,

e) $CH_3SO_2\text{-}$,

f) 

,

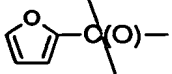
g) $F_2CHC(O)\text{-}$,

h) 

,

i) $H_3C\text{-}C(O)\text{-}O\text{-}CH_2\text{-}C(O)\text{-}$,

j) $H\text{-}C(O)\text{-}O\text{-}CH_2\text{-}C(O)\text{-}$,

k) 

,

l) $HC{\equiv}C\text{-}CH_2O\text{-}CH_2\text{-}C(O)\text{-}$, or

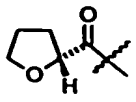
m) $phenyl\text{-}CH_2\text{-}O\text{-}CH_2\text{-}C(O)\text{-}$;

wherein R^{107} is

a) $R^{102}O\text{-}C(R^{110})(R^{111})\text{-}C(O)\text{-}$,

b) $R^{103}O\text{-}C(O)\text{-}$,

c) $R^{108}\text{-}C(O)\text{-}$,

d) 

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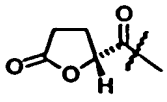
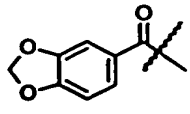
e) 

,

f) $H_3C\text{-}C(O)\text{-}(CH_2)_2\text{-}C(O)\text{-}$,

g) $R^{109}\text{-}SO_2\text{-}$,

h) 

,

i) $HO-CH_2-C(O)-$,

j) $R^{116}-(CH_2)_2-$,

k) $R^{113}-C(O)-O-CH_2-C(O)-$,

l) $(CH_3)_2N-CH_2-C(O)-NH-$,

m) $NC-CH_2-$,

n) $F_2-CH-CH_2-$, or

o) $R^{150}R^{151}NSO_2$

wherein R^{108} is

a) H-,

b) (C_1-C_4)alkyl,

c) aryl $-(CH_2)_p$,

d) ClH_2C-,

e) Cl_2HC-,

f) FH_2C-,

g) F_2HC-,

h) (C_3-C_6)cycloalkyl, or

i) $CNCH_2-$.

wherein R^{109} is

a) alkylC_1-C_4,

b) $-CH_2Cl$

c) $-CH_2CH=CH_2$,

d) aryl, or

e) $-CH_2CN$;

wherein R^{110} and R^{111} are independently

a) H-,

b) CH_3-; or

wherein R^{112} is

a) H-,

b) $CH_3O-CH_2O-CH_2-$, or

c) $HOCH_2-$;

wherein R^{113} is

a) CH_3-,

b) $HOCH_2-$,

c) $(CH_3)_2N$-phenyl, or

d) $(CH_3)_2N-CH_2-$;

wherein R^{114} is

a) HO-,
b) CH_3O-,
c) H_2N-,
d) CH_3O-C(O)-O-,
e) CH_3-C(O)-O-CH_2-C(O)-O-,
f) phenyl-CH_2-O-CH_2-C(O)-O-,
g) HO-$(CH_2)_2$-O-,
h) CH_3O-CH_2-O-$(CH_2)_2$-O-, or
i) CH_3O-CH_2-O-;wherein R^{113} is
a) CH_3-,
b) $HOCH_2$-,
c) $(CH_3)_2N$-phenyl, or
d) $(CH_3)_2N$-CH_2-;

wherein R^{115} is

a) H-, or
b) Cl-;

wherein R^{116} is

a) HO-
b) CH_3O-, or
c) F;

wherein R^{150} and R^{151} are each H or alkyl C_1-C_4 or R^{150} and R^{151} taken together with the nitrogen atom to which each is attached form a monocyclic heterocyclic ring having from 3 to 6 carbon atoms;

B is an unsaturated 4-atom linker having one nitrogen and three carbons;

M is

a) H,
b) C_{1-8} alkyl,
c) C_{3-8} cycloalkyl,
d) $-(CH_2)_mOR_{13}$, or
e) $-(CH_2)_h$-$NR_{21}R_{22}$;

Z is

a) O,
b) S, or
c) NM;

W is

a) CH,

b) N, or

c) S or O when Z is NM;

Y is

a) H,

b) F,

c) Cl,

d) Br,

e) C_{1-3} alkyl, or

f) NO_2;

X is

a) H,

b) -CN,

c) OR_{27},

d) halo,

e) NO_2,

f) tetrazoyl,

g) -SH,

h) $-S(=O)_iR_4$,

i) $-S(=O)_2-N=S(O)_jR_5R_6$,

j) $-SC(=O)R_7$,

k) $-C(=O)R_{25}$,

l) $-C(=O)NR_{27}R_{28}$,

m) $-C(=NR_{29})R_{25}$,

n) $-C(R_{25})(R_{28})-OR_{13}$,

o) $-C(R_{25})(R_{28})-OC(=O)R_{13}$,

p) $-C(R_{28})(OR_{13})-(CH_2)_h-NR_{27}R_{28}$,

q) $-NR_{27}R_{28}$,

r) $-N(R_{27})C(=O)R_7$,

s) $-N(R_{27})-S(=O)_iR_7$,

t) $-C(OR_{14})(OR_{15})R_{28}$,

u) $-C(R_{25})(R_{16})-NR_{27}R_{26}$, or

v) C_{1-8} alkyl substituted with one or more halos, OH, =O other than at alpha position, $-S(=O)_iR_{17}$, $-NR_{27}R_{28}$, C_{2-6} alkenyl, C_{2-6} alkynyl, or C_{3-8} cycloalkyl;

R_4, R_5, R_6, R_7, R_{13}, R_{14}, R_{15}, R_{16}, and R_{17} are the same as defined above;

R_{25} is

a) H,

b) C_{1-6} alkyl optionally substituted with one or more halos, C_{3-6} cycloalkyl, C_{1-4} alkyl substituted with one or more of $-S(=O)_iR_{17}$, $-OR_{18}$, or $OC(=O)R_{18}$, $NR_{27}R_{28}$, or

c) C_{2-5} alkenyl optionally substituted with CHO, or CO_2R_{13};

R_{26} is

a) R_{28}, or

b) $NR_{27}N_{28}$;

R_{27} and R_{28} at each occurrence are the same or different and are

a) H,

b) C_{1-8} alkyl,

c) C_{3-8} cycloalkyl,

d) $-(CH_2)_mOR_{13}$,

e) $-(CH_2)_h-NR_{21}R_{22}$, or

f) R_{27} and R_{28} taken together are $-(CH_2)_2O(CH_2)_2-$, $-(CH_2)_hCH(COR_7)-$, or $-(CH_2)_2N(CH_2)_2(R_7)$;

R_{29} is

a) $-NR_{27}R_{28}$,

b) $-OR_{27}$, or

c) $-NHC(=O)R_{28}$;

wherein R_{30} is

a) H,

b) C_{1-8} alkyl optionally substituted with one or more halos, or

c) C_{1-8} alkyl optionally substituted with one or more OH, or C_{1-6} alkoxy;

wherein E is

a) NR_{39},

b) $-S(=O)_i$, or

c) O;

R_{38} is

a) H,

b) C_{1-6} alkyl,

c) $-(CH_2)_q$-aryl, or

d) halo;

R_{39} is

a) H,

b) C_{1-6} alkyl optionally substituted with one or more OH, halo, or -CN,

c) $-(CH_2)_q$-aryl,

d) $-CO_2R_{40}$,

e) $-COR_{41}$,

f) $-C(=O)-(CH_2)_q-C(=O)R_{40}$,

g) $-S(=O)_2-C_{1-6}$ alkyl,

h) $-S(=O)_2-(CH_2)_q$-aryl, or

i) $-(C=O)_j$-Het;

R_{40} is

a) H,

b) C_{1-6} alkyl optionally substituted with one or more OH, halo, or -CN,

c) $-(CH_2)_q$-aryl, or

d) $-(CH_2)_q-OR_{42}$;

R_{41} is

a) C_{1-6} alkyl optionally substituted with one or more OH, halo, or -CN,

b) $-(CH_2)_q$-aryl, or

c) $-(CH_2)_q-OR_{42}$;

R_{42} is

a) H,

b) C_{1-6} alkyl,

c) $-(CH_2)_q$-aryl, or

d) $-C(=O)-C_{1-6}$ alkyl;

aryl is

a) phenyl,

b) pyridyl, or

c) napthyl; a to c optionally substituted with one or more halo, -CN, OH, SH, C_{1-6} alkyl, C_{1-6} alkoxy, or C_{1-6} alkylthio;

wherein R_{43} is

a) H,

b) C_{1-2} alkyl,

c) F, or

d) OH;

R_{44} is

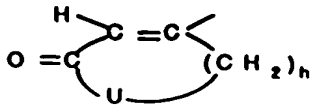
a) H,

b) CF_3,

c) C_{1-3} alkyl optionally substituted with one or more halo,

d) phenyl optionally substituted with one or more halo,

e) R_{44} and R_{45} taken together are a 5-, 6-, or 7-membered ring of the formula,

or 

f) R_{44} and R_{45} taken together are $-(CH_2)_k-$, when R_{46} is an electron-withdrawing group;

R_{45} and R_{46} at each occurrence are the same or different and are

a) an electron-withdrawing group,

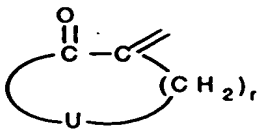
b) H,

c) CF_3,

d) C_{1-3} alkyl optionally substituted with one halo,

e) phenyl, provided at least one of R_{45} or R_{46} is an electron-withdrawing group, or

f) R_{45} and R_{46} taken together are a 5-, 6-, 7-membered ring of the formula

 ;

U is

a) CH_2,

b) O,

c) S, or

d) NR_{47};

R_{47} is

a) H, or

b) C_{1-5} alkyl;

wherein R_{48} is

a) carboxyl,

b) halo,

c) -CN,

d) mercapto,

e) formyl,

f) CF_3,

g) $-NO_2$,

h) C_{1-6} alkoxy,

i) C_{1-6} alkoxycarbonyl,

j) C_{1-6} alkythio,

k) C_{1-6} acyl,

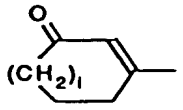
l) $-NR_{49}R_{50}$,

m) C_{1-6} alkyl optionally substituted with OH, C_{1-5} alkoxy, C_{1-5} acyl, or $-NR_{49}R_{50}$,

n) C_{2-8} alkenylphenyl optionally substituted with one or two R_{51},

o) phenyl optionally substituted with one or two R_{51},

p) a 5-, or 6-membered (un)saturated heterocyclic moiety having one to three atoms selected from the group consisting of S, N, and O, optionally substituted with one or two R_{51}, or

q)  ;

R_{49} and R_{50} at each occurrence are the same or different and are

a) H,

b) C_{1-4} alkyl,

c) C_{5-6} cycloalkyl, or

d) R_{49} and R_{50} taken together with the nitrogen atom is a 5-, 6-membered saturated heterocyclic moiety which optionally has a further hetero atom selected from the group consisting of S, N, and O, and can in turn be optionally substituted with, including on the further nitrogen atom, C_{1-3} alkyl, or C_{1-3} acyl;

R_{51} is

a) carboxyl,

b) halo,

c) -CN,

d) mercapto,

e) formyl,

f) CF_3,

g) $-NO_2$,

h) C_{1-6} alkoxy,

i) C_{1-6} alkoxycarbonyl,

j) C_{1-6} alkythio,

k) C_{1-6} acyl,

l) C_{1-6} alkyl optionally substituted with OH, C_{1-5} alkoxy, C_{1-5} acyl, or $-NR_{49}R_{50}$,

m) phenyl,

n) $-C(=O)NR_{52}R_{53}$,

o) $-NR_{49}R_{50}$,

p) $-N(R_{52})(-SO_2R_{54})$,

q) $-SO_2-NR_{52}R_{53}$, or

r) $-S(=O)_iR_{54}$;

R_{52} and R_{53} at each occurrence are the same or different and are

a) H,

b) C_{1-6} alkyl, or

c) phenyl;

R_{54} is

a) C_{1-4} alkyl, or

b) phenyl optionally substituted with C_{1-4} alkyl;

wherein R_{55} is

a) carboxyl,

b) halo,

c) -CN,

d) mercapto,

e) formyl,

f) CF_3,

g) $-NO_2$,

h) C_{1-6} alkoxy,

i) C_{1-6} alkoxycarbonyl,

j) C_{1-6} alkythio

k) C_{1-6} acyl,

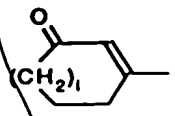
l) $-NR_{56}R_{57}$,

m) C_{1-6} alkyl optionally substituted with OH, C_{1-5} alkoxy, C_{1-5} acyl, or $-NR_{56}R_{57}$,

n) C_{2-8} alkenylphenyl optionally substituted with one or two R_{58},

o) phenyl optionally substituted with one or two R_{58},

p) a 5- or 6-membered (un)saturated heterocyclic moiety having one to three atoms selected from the group consisting of S, N, and O, optionally substituted with one or two R_{58}, or

q)  ;

R_{56} and R_{57} at each occurrence are the same or different and are

a) H,

b) formyl,

c) C_{1-4} alkyl,

d) C_{1-4} acyl,

e) phenyl,

f) C_{3-6} cycloalkyl, or

g) R_{56} and R_{57} taken together with the nitrogen atom is a 5-, 6-membered saturated heterocyclic moiety which optionally has a further hetero atom selected from the group consisting of S, N, and O, and can in turn be optionally substituted with, including on the further nitrogen atom, phenyl, pyrimidyl, C_{1-3} alkyl, or C_{1-3} acyl;

R_{58} is

a) carboxyl,

b) halo,

c) -CN,

d) mercapto,

e) formyl,

f) CF_3,

g) $-NO_2$,

h) C_{1-6} alkoxy,

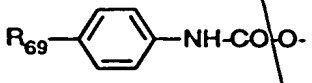
i) C_{1-6} alkoxycarbonyl,

j) C_{1-6} alkythio,

k) C_{1-6} acyl,

l) phenyl,

m) C_{1-6} alkyl optionally substituted with OH, azido, C_{1-5} alkoxy, C_{1-5} acyl, $-NR_{65}R_{66}$, $-SR_{67}$, $-O-SO_2R_{68}$; or



n) $-C(=O)NR_{59}\ R_{60}$,

o) $-NR_{56}R_{57}$,

p) $-N(R_{59})(-SO_2R_{64})$,

q) $-SO_2-NR_{59}R_{60}$,

r) $-S(=O)_iR_{64}$,

s) $-CH=N-R_{61}$, or

t) $-CH(OH)-SO_3R_{64}$;

R_{64} is the same as defined above;

R_{59} and R_{60} at each occurrence are the same or different and are

a) H,

b) C_{1-6} alkyl,

c) phenyl, or

d) tolyl;

R_{61} is

a) OH,

b) benzyloxy,

c) $-NH-C(=O)-NH_2$,

d) $-NH-C(=S)-NH_2$, or

e) $-NH-C(=NH)-NR_{62}R_{63}$;

R_{62} and R_{63} at each occurrence are the same or different and are

a) H, or

b) C_{1-4} alkyl optionally substituted with phenyl or pyridyl;

R_{64} is

a) H, or

b) a sodium ion;

R_{65} and R_{66} at each occurrence are the same or different and are

a) H,

b) formyl,

c) C_{1-4} alkyl,

d) C_{1-4} acyl,

e) phenyl,

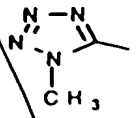
f) C_{3-6} cycloalkyl,

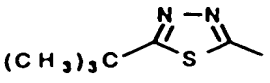
g) R_{65} and R_{66} taken together are a 5-, 6-membered saturated heterocyclic moiety having one to three atoms selected from the group consisting of S, N, and O, optionally substituted with, including on the nitrogen atom, phenyl, pyrimidyl, C_{1-3} alkyl, or C_{1-3} acyl,

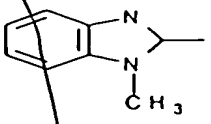
h) $-P(O)(OR_{70})(OR_{71})$, r

i) $-SO_2-R_{72}$;

R_{67} is







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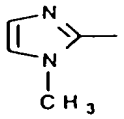


R_{68} is C_{1-3} alkyl;

R_{69} is

a) C_{1-6} alkoxycarbonyl, or

b) carboxyl;

R_{70} and R_{71} at each occurrence are the same or different and are

a) H, or

b) C_{1-3} alkyl;

R_{72} is

a) methyl,

b) phenyl, or

c) tolyl;

wherein K is

a) O, or

b) S;

R_{73}, R_{74}, R_{75}, R_{76}, and R_{77} at each occurrence are the same or different and are

a) H,

b) carboxyl,

c) halo,

d) -CN,

e) mercapto,

f) formyl,

g) CF_3,

h) $-NO_2$,
i) C_{1-5} alkoxy,
j) C_{1-6} alkoxycarbonyl,
k) C_{1-6} alkythio,
l) C_{1-6} acyl,
m) $-NR_{78}R_{79}$,
n) C_{1-6} alkyl optionally substituted with OH, C_{1-5} alkoxy, C_{1-5} acyl, $-NR_{78}R_{79}$, -N(phenyl)(CH_2-CH_2-OH), -O-CH(CH_3)(OCH_2CH_3), or -O-phenyl-[para-NHC(=O)CH_3],
o) C_{2-6} alkenylphenyl optionally substituted with R_{51},
p) phenyl optionally substituted with R_{51}, or
q) a 5-, or 6-membered (un)saturated heterocyclic moiety having one to three atoms selected from the group consisting of S, N, and O, optionally substituted with R_{51};

R_{51} is the same as defined above;

R_{78} and R_{79} at each occurrence are the same or different and are

a) H,
b) C_{1-4} alkyl,
c) phenyl, or
d) R_{78} and R_{79} taken together with the nitrogen atom is a 5-, 6-membered saturated heterocyclic moiety which optionally has a further hetero atom selected from the group consisting of S, N, and O, and can in turn be optionally substituted with, including on the further nitrogen atom, C_{1-3} alkyl, or C_{1-3} acyl;

wherein T is

a) O,
b) S, or
c) SO_2;

R_{75}, R_{76}, and R_{77} are the same as defined above;

R_{80} is

a) H,
b) formyl,
c) carboxyl,
d) C_{1-6} alkoxycarbonyl,
e) C_{1-6} alkyl,
f) C_{2-6} alkenyl,

wherein the substituents (e) and (f) can be optionally substituted with OH, halo, C_{1-6} alkoxy, C_{1-6} acyl, C_{1-6} alkylthio or C_{1-6} alkoxycarbonyl, or phenyl optionally substituted with halo,

g) an aromatic moiety having 6 to 10 carbon atoms optionally substituted with carboxyl, halo, -CN, formyl, CF_3, $-NO_2$, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} acyl, C_{1-6} alkylthio, or C_{1-6} alkoxycarbonyl;

h) $-NR_{81}R_{82}$,

i) $-OR_{90}$,

j) $-S(=O)_i-R_{91}$,

k) $-SO_2-N(R_{92})(R_{93})$, or

l) a radical of the following formulas:

R_{81} and R_{82} at each occurrence are the same or different and are

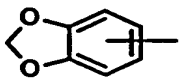
a) H,

b) C_{3-6} cycloalkyl,

c) phenyl,

d) C_{1-6} acyl,

e) C_{1-8} alkyl optionally substituted with OH, C_{1-6} alkoxy which can be substituted with OH, a 5-, or 6-membered aromatic heterocyclic moiety having one to three atoms selected from the group consisting of S, N, and O, phenyl optionally substituted with OH, CF_3, halo, $-NO_2$, C_{1-4} alkoxy, $-NR_{83}R_{84}$, or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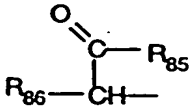
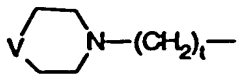
f) 
, or

g) 
;

V is

a) O,

b) CH_2, or

c) NR_{87};

R_{83} and R_{84} at each occurrence are the same or different and are

a) H, or

b) C_{1-4} alkyl;

R_{85} is

a) OH,

b) C_{1-4} alkoxy, or

c) $-NR_{88}R_{89}$;

R_{86} is

a) H, or

b) C_{1-7} alkyl optionally substituted with indolyl, OH, mercaptyl, imidazoly, methylthio, amino, phenyl optionally substituted with OH, $-C(=O)-NH_2$, $-CO_2H$, or $-C(=NH)-NH_2$;

R_{87} is

a) H,

b) phenyl, or

c) C_{1-6} alkyl optionally substituted by OH;

R_{88} and R_{89} at each occurrence are the same or different and are

a) H,

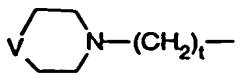
b) C_{1-5} alkyl

c) C_{3-6} cycloalky, or

d) phenyl;

R_{90} is

a) C_{1-6} alkyl optionally substituted with C_{1-6} alkoxy or C_{1-6} hydroxy, C_{3-6} cycloalkyl, a 6-membered aromatic optionally benzo-fused heterocyclic moiety having one to three nitrogen atoms, which can in turn be substituted with one or two $-NO_2$, CF_3, halo, -CN, OH, C_{1-5} alkyl, C_{1-5} alkoxy, or C_{1-5} acyl;

b)  ,

c) phenyl, or

d) pyridyl;

R_{91} is

a) C_{1-16} alkyl,

b) C_{2-16} alkenyl,

wherein the substituents (a) and (b) can be optionally substituted with C_{1-6} alkoxycarbonyl, or a 5-, 6-, 7-membered aromatic heterocyclic moiety having one to three atoms selected from the group consisting of S, N, and O,

c) an aromatic moiety having 6 to 10 carbon atoms, or

d) a 5-, 6-, 7-membered aromatic heterocyclic moiety having one to three atoms selected from the group consisting of S, N, and O,

wherein the substituents (c) and (d) can be optionally substituted with carboxyl, halo, -CN, formyl, CF_3, $-NO_2$, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} acyl, C_{1-6} alkylthio, or C_{1-6} alkoxycarbonyl;

R_{92} and R_{93} at each occurrence are the same or different and are

a) H,

b) phenyl,

c) C_{1-6} alkyl, or

d) benzyl;

R_{94} and R_{95} at each occurrence are the same or different and are

a) H,

b) OH,

c) C_{1-6} alkyl optionally substituted with $-NR_{83}R_{84}$, or

d) R_{94} and R_{95} taken together are =O;

R_{96} is

a) an aromatic moiety having 6 to 10 carbon atoms,

b) a 5-, or 6-membered aromatic optionally benzo-fused heterocyclic moiety having one to three atoms selected from the group consisting of S, N, and O,

wherein the substituents (a) and (b) which can in turn be substituted with one or three $-NO_2$, CF_3, halo, -CN, OH, phenyl, C_{1-5} alkyl, C_{1-5} alkoxy, or C_{1-6} acyl,

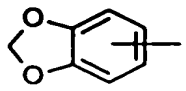
c) morpholinyl,

d) OH,

) C_{1-6} alkoxy,

f) $-NR_{83}R_{84}$,

g) $-C(=O)-R_{97}$, or

h)  ;

R_{97} is

a) morpholinyl,

b) OH, or

c) C_{1-6} alkoxy;

h is 1, 2, or 3;

i is 0, 1, or 2;

j is 0 or 1;

k is 3, 4, or 5;

l is 2 or 3;

m is 4 or 5;

n is 0, 1, 2, 3, 4, or 5;

p is 0, 1, 2, 3, 4, or 5; with the proviso that n and p together are 1, 2, 3, 4, or 5;

q is 1, 2, 3, or 4;

r is 2, 3, or 4;

t is 0, 1, 2, 3, 4, 5, or 6;

u is 1 or 2;

w is 0, 1, 2, or 3.

Sub C' Contd

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2. The method according to claim 1 wherein said mammal is a human.

3. The method according to claim 1 wherein the compound is administered in the range of about 0.1 to about 100 mg/kg of mammal body weight/day.

4. The method according to claim 1 wherein the compound is administered orally, nasally, parenterally, topically, transdermally, or rectally.

5. The method according to claim 1 wherein said compound is selected from the group consisting of :

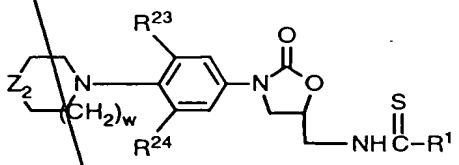
(S)-trans-[[3-[3-Fluoro-4-(tetrahydro-1-oxido-2H-thiopyran-4-yl)phenyl]-2-oxo-5-oxazolidinyl]methyl]thiourea; and

(S)-N-[[3-[3-Fluoro-4-(4-thiomorpholinyl)phenyl]-2-oxo-5-oxazolidinyl]methyl]thio-acetamide, thiomorpholine S-oxide; and

pharmaceutically acceptable salts thereof.

6. The method according to claim 1 wherein said mammal is not suffering from an antibacterial infection.

7. A method of treating or preventing osteoporosis, bone resorption or other bone disease in a vertebrate mammal, comprising the step of administering to a mammal in need of such treatment, an effective amount of a compound of formula II



(II)

wherein Z_2 is $-O_2S-$, $-O-$, $-N(R^{107})-$, $-OS-$, or $-S-$;

w is 0, 1, 2, or 3;

R^{23} and R^{24} are the same or different and can be H or F; and

R^1 is H, NH_2, NHalkylC_1-C_4; N(alkylC_1-C_4)$_2$;  ;

alkylC_1-C_4; OalkylC_1-C_4; SalkylC_1-C_4; alkylC_1-C_4 substituted with 1-3F, 1-2Cl, CN, or -COOalkylC_1-C_4, or cycloalkylC_3-C_6, wherein in each occurrence of the alkyl group may be straight or branched; and

R^{107} is

a) $R^{102}O-C(R^{110})(R^{111})-C(O)-$,

b) $R^{103}O-C(O)-$,

c) $R^{108}-C(O)-$,

d) $R^{109}-SO_2-$,

e) $NC-CH_2-$,

f) $FCHCH_2-$, or

g) $R^{150}R^{151}NSO_2$-;

wherein R^{102} is H, CH_3-, phenyl-CH_2-, or $CH_3C(O)$; each of R^{110} and R^{111} is selected from H or CH_3; R^{103} is alkylC_1-C_3 or phenyl; R^{108} is H, alkylC_1-C_4, aryl$(CH_2)_{0-5}$, $CNCH_2$-, $ClCH_2$-, Cl_2HC-, FH_2C-, F_2HC-, or cycloalkylC_3-C_6; R^{150} and R^{151} are the same or different and are selected from H, alkylC_1-C_4, or R^{150} and R^{151} taken together with the nitrogen to which each is attached forms a monocyclic heterocyclic ring having from 3 to 6 carbon atoms.

8. The method according to claim 7 wherein said mammal is a human.

9. The method according to claim 7 wherein the compound is administered in the range of about 0.1 to about 100 mg/kg of mammal body weight/day.

10. The method according to claim 7 wherein the compound is administered orally, nasally, parenterally, topically, transdermally, or rectally.

11. The method according to claim 7 wherein said compound is selected from the group consisting of :

(S)-trans-[[3-[3-Fluoro-4-(tetrahydro-1-oxido-2H-thiopyran-4-yl)phenyl]-2-oxo-5-oxazolidinyl]methyl]thiourea; and

(S)-N-[[3-[3-Fluoro-4-(4-thiomorpholinyl)phenyl]-2-oxo-5-oxazolidinyl]methyl]thio-acetamide, thiomorpholine S-oxide; and

pharmaceutically acceptable salts thereof.

12. The method according to claim 7 wherein said mammal is not suffering from an antibacterial infection.

13. The use of a compound of formula (I) or formula (II) to prepare a medicament for treating or preventing osteoporosis, bone resorption or other bone disease in a mammal.

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